Renewable Energy 12: *What methods have been used by other states or countries to set renewable targets?*

Executive Summary

There are many facets to the design of an RPS, and no two states are exactly alike. The following methods have been used by other states or countries to set renewable targets:

1. Renewable portfolio standards (RPSs) in the majority of states are based on a percentage of electricity sales from renewable energy. A few states, namely Iowa, Michigan, and Texas, have a requirement for a minimum megawatt of installed renewable capacity. Michigan appears to be the only state to use a combination of both approaches (% and MW targets).
2. The majority of the renewable targets were established through state legislation, although a few were by voter referendum to enact or amend the state law. No state has instituted the target through a constitutional amendment. Eight states have non-enforceable goals.
3. In setting renewable targets, some states have considered the policies and experiences in other states as well as studies of renewable energy potential and related policy considerations.

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Twenty-nine states, the District of Columbia, and two U.S. territories have RPSs. All but two of these jurisdictions require a minimum percentage of electricity from renewable energy sources by a particular date, often with interim targets. As outlined in detail under Renewable Energy Question 7, these percentages, timelines, applicability to different types of providers, and other aspects vary considerably among states.

Three states—Iowa, Michigan, and Texas—have installed renewable energy capacity requirements. Michigan appears to be the only state with a megawatt capacity requirement and a percentage standard. In addition to Michigan's 10% renewable *energy* standard applicable to all electricity providers in the state, the state's two largest utilities, DTE Energy and Consumers Energy, are required to meet renewable energy *capacity* requirements as shown below. This capacity requirement ensures that new renewable generation would be built in Michigan.

- Consumers Energy—Total of 200 megawatts (installed capacity) by 2013 and 500 MW by 2015
- Detroit Edison (DTE)—Total of 300 MW and 600 MW by 2013 and 2015, respectively

Some states have included "carve outs" for specific types of generation, such as distributed or customer-owned renewable generation of any type or, most commonly, a specific technology such as solar photovoltaic. This is generally intended to increase the diversity of renewable resources used to meet the standard or stimulate the market for a particular technology. Such approaches may affect overall cost of compliance because the "carve out" technologies are typically not the least-cost option. For example, solar renewable energy credits (SRECS) in New Jersey, a state with solar carve out, had average prices in the range of $225–$390 per megawatt-hour during 2012, considerably higher than

traditional RECs.[1] Details on the overall standard and "carve outs" are included in the Database for State Incentives for Renewable Energy and Efficiency, at dsireusa.org.

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The typical method for establishing renewable targets is through state legislation. Colorado, Missouri, and Washington enacted or amended the RPS through ballot initiatives or voter referendum, which are sometimes confused with a constitutional amendment. These ballot initiatives created *statutory* renewable standards, which can be amended by subsequent legislation. No state has enacted an RPS through an amendment to the state's constitution.

Eight states—the Dakotas, Indiana, North Carolina, Oklahoma, Vermont, Virginia, and West Virginia—have non-enforceable renewable energy goals. Iowa has an RPS in law but also a non-enforceable goal that goes beyond the statutory RPS.

3. In setting renewable targets, some states have considered the policies and experiences in other states as well as studies of renewable energy potential and related policy considerations.

There are many facets to the design of an RPS,[2] and no two states are exactly alike. Numerous studies of renewable energy potential and integration have been developed and serve as a resource for states when making policy decisions. Some states have also relied on technical assistance from the National Renewable Energy Laboratory or others in establishing RPS policies. It is important to note, however, that many studies do not consider all costs or benefits associated with renewable energy and trade-offs, particularly down to the state or local level. In addition, many studies are based on the long-term, theoretical potential of renewable energy, not the market or economic potential as discussed further in Renewable Energy Question 8. Thus, they do consider economic feasibility or other factors such as siting challenges.

The regional availability of renewable resources and the current cost of electricity may also be factors in setting the state's RPS. For example, states such as California with aggressive renewable targets have abundant wind and solar resources and relatively high electricity prices. In contrast, states in the southeast have been slower to adopt renewable energy standards and have relatively low electric rates with poor renewable resource availability.

The RPS target and related details such as the eligibility of particular technologies are ultimately political decisions but should be informed by the state's overarching policy goals. These goals may include resource diversity/energy security, environmental protection, local jobs and tax revenue, local manufacturing, fostering distributed, customer-owned generation, and/or overall investment at the

[1] DSIREUSA.org. There are significant variations for individual trades. For historical comparison of SRECS and traditional RECs in New Jersey and other states, see EPA Clean Energy-Environment Technical Forum Renewable Energy Certificates: Background & Resources, October 21, 2008. Available at: http://www.epa.gov/statelocalclimate/documents/pdf/background_paper_recs_10-21-2008.pdf. See also Ryan Wiser, Galen Barbose, Edward Holt, Supporting Solar Power in Renewables Portfolio Standards: Experience from the United States, October 2010, p. 30. Available at http://eetd.lbl.gov/ea/emp/reports/lbnl-3984e.pdf.

[2] See Renewable Energy Question 7. See also Nancy Rader and Scott Hempling, *The Renewable Portfolio Standard: A Practical Guide*, Prepared for the National Association of Regulatory Utility Commissioners, February 2001. Available at: http://www.naruc.org/grants/Documents/rps.pdf. The National Renewable Energy Laboratory has guidance and references available at: http://www.nrel.gov/tech_deployment/state_local_activities/basics_portfolio_standards.html.

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least cost, or some combination of goals. Depending on the goals, different approaches can be used in setting the target. For example, Pennsylvania's RPS includes coal waste byproducts (coal mine methane and coal waste) as a mechanism to promote a local, abundant resource in the state and the associated jobs. These policy goals should also be used to measure performance of the RPS in an objective manner as it is implemented.